

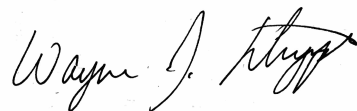


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

Date: 6/26/2018
Subject: Review of Region 5 Data for Middletown, OH
To: Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60605
From: Wayne Whipple, Chemist
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with the EPA QA/G-8 *Guidance on Environmental Data Verification and Data Validation* and the U.S. EPA Region 5 RMD QMP, CRL performs data verification on all the data generated internally. CRL does not perform data validation or quality assessment procedures.

This report was reviewed and the information provided herein accurately represents the analysis performed.



Please contact the analyst with any technical report issues, Robert Thompson at (312)-353-9078 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: Middletown, OH

Analyses included in this report:

Air Toxics Reimer 5

Report Name: 1805010 Air Toxics Reimer 5 FINAL Jun 26 18 1535



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone: (312) 353-8370 Fax: (312) 886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Accredited Analyses included in this Report



Method: *TO-15 in Air*
Analysis: *Air Toxics Reimer 5*

Analyte

Certifications

Propene	ISO/IEC 17025:2005
Chloromethane	ISO/IEC 17025:2005
Methanol	ISO/IEC 17025:2005
Vinyl chloride	ISO/IEC 17025:2005
Isobutene	ISO/IEC 17025:2005
1,3-butadiene	ISO/IEC 17025:2005
Acetaldehyde	ISO/IEC 17025:2005
Bromomethane	ISO/IEC 17025:2005
Chloroethane	ISO/IEC 17025:2005
Ethanol	ISO/IEC 17025:2005
Acrolein	ISO/IEC 17025:2005
Acetonitrile	ISO/IEC 17025:2005
Isopropyl alcohol	ISO/IEC 17025:2005
Propanal	ISO/IEC 17025:2005
Acetone	ISO/IEC 17025:2005
Pentane	ISO/IEC 17025:2005
Isoprene	ISO/IEC 17025:2005
1,1-Dichloroethene	ISO/IEC 17025:2005
Methyl iodide	ISO/IEC 17025:2005
Acrylonitrile	ISO/IEC 17025:2005
Methylene chloride	ISO/IEC 17025:2005
Carbon disulfide	ISO/IEC 17025:2005
1-Propanol	ISO/IEC 17025:2005
Cyclopentane	ISO/IEC 17025:2005
Methyl tert-butyl ether	ISO/IEC 17025:2005
Methacrolein	ISO/IEC 17025:2005



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Accredited Analyses included in this Report



Method: *TO-15 in Air*
Analysis: *Air Toxics Reimer 5*
Analyte

Certifications

1,1-Dichloroethane	ISO/IEC 17025:2005
Vinyl acetate	ISO/IEC 17025:2005
Methyl vinyl ketone	ISO/IEC 17025:2005
Butanal	ISO/IEC 17025:2005
Hexane	ISO/IEC 17025:2005
2-Butanone	ISO/IEC 17025:2005
cis-1,2-Dichloroethene	ISO/IEC 17025:2005
trans-1,2-Dichloroethene	ISO/IEC 17025:2005
Chloroform	ISO/IEC 17025:2005
1,2-Dichloroethane	ISO/IEC 17025:2005
1-Butanol	ISO/IEC 17025:2005
Cyclohexane	ISO/IEC 17025:2005
Benzene	ISO/IEC 17025:2005
2-Pentanone	ISO/IEC 17025:2005
3-Pentanone	ISO/IEC 17025:2005
Pentanal	ISO/IEC 17025:2005
1,2-Dichloropropane	ISO/IEC 17025:2005
Trichloroethene	ISO/IEC 17025:2005
Bromodichloromethane	ISO/IEC 17025:2005
1,4-Dioxane	ISO/IEC 17025:2005
cis-1,3-Dichloropropene	ISO/IEC 17025:2005
4-Methyl-2-pentanone	ISO/IEC 17025:2005
trans-1,3-Dichloropropene	ISO/IEC 17025:2005
1,1,2-Trichloroethane	ISO/IEC 17025:2005
Dibromochloromethane	ISO/IEC 17025:2005
Toluene	ISO/IEC 17025:2005



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Accredited Analyses included in this Report



Method: *TO-15 in Air*
Analysis: *Air Toxics Reimer 5*
Analyte

Certifications

3-Hexanone	ISO/IEC 17025:2005
2-Hexanone	ISO/IEC 17025:2005
Hexanal	ISO/IEC 17025:2005
1,2-Dibromoethane (EDB)	ISO/IEC 17025:2005
Tetrachloroethene	ISO/IEC 17025:2005
Chlorobenzene	ISO/IEC 17025:2005
Ethylbenzene	ISO/IEC 17025:2005
m+p-Xylene	ISO/IEC 17025:2005
Bromoform	ISO/IEC 17025:2005
Styrene	ISO/IEC 17025:2005
1,1,2,2-Tetrachloroethane	ISO/IEC 17025:2005
o-Xylene	ISO/IEC 17025:2005
1,3,5-Trimethylbenzene	ISO/IEC 17025:2005
1,2,4-Trimethylbenzene	ISO/IEC 17025:2005
1,3-Dichlorobenzene	ISO/IEC 17025:2005
Benzyl chloride	ISO/IEC 17025:2005
1,4-Dichlorobenzene	ISO/IEC 17025:2005
1,2,3-Trimethylbenzene	ISO/IEC 17025:2005
1,2-Dichlorobenzene	ISO/IEC 17025:2005
Hexachlorobutadiene	ISO/IEC 17025:2005
1,2,4-Trichlorobenzene	ISO/IEC 17025:2005
Naphthalene	ISO/IEC 17025:2005

Analytes not listed above are not accredited by ANAB.



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Client Air Division, US EPA Region 5
Project Middletown, OH no. [none].
The Laboratory work order number is 1805010

Samples were analyzed for volatile organic compounds (VOCs) in air using CRL MS 005 rev 2 (based on US EPA TO-15) with pen and ink changes 8327, 9436 and 9102 which allows for the use of the new Entech 7200 Preconcentrator and 7650 Robotic arm for sample analysis and an extended list of target compounds and clarifies a discrepancy between analytical and data review SOPs with the ICV recoveries.

General Information:

Analyst: Wayne J. Whipple, Ph.D.
Work Phone (312) 353-9063
email whipple.wayne@epa.gov

There were 11 samples received on May-10-18 13:30 by Colin Breslin.

The samples were sampled on:

<u>Laboratory ID</u>	<u>Sample Name</u>	<u>Sample Date</u>
1805010-01	AK Steel upwind composite	May-07-18 10:08
1805010-02	AK Steel downwind composite	May-07-18 10:38
1805010-03	AK Steel DW grab # 1	May-07-18 10:39
1805010-04	AK Steel DW comp # 2	May-07-18 10:59
1805010-05	AK Steel DW grab # 2	May-07-18 21:15
1805010-06	AK Steel DW grab # 3	May-07-18 21:23
1805010-07	AK Onsite # 1	May-08-18 12:54
1805010-08	AK Onsite # 2	May-08-18 12:57
1805010-09	AK Onsite # 3	May-08-18 13:02
1805010-10	AK Steel DW grab # 1 FD	May-07-18 10:39
1805010-11	AK Steel DW grab # 2 FD	May-07-18 21:15

The project objectives were to analyze samples for BTEX, 1,3-butadiene and naphthalene.

The data is reported to the RL.

The QAPP is the GMAP QAPP used by ARD. The reported results meet the data quality objectives for this project.

Preliminary results were sent on May 18, 2018.

Analysis Information:

The samples were analyzed in two batches with three different calibrations for the single work order because the mass spectrometer drifted response outside of the SOP acceptance limits and a sample needed additional confirmation . Midway through first batch the response for the detector drifted outside the SOP acceptance limits so another calibration was performed. Sample 1805010-08 had a result for benzene that was above calibration and did not have an acceptable confirmation analysis so a reanalysis was needed to confirm the high concentration result. There are a few data calibration checks that had internal standards that exceeded the allowable response and that data associated with the specific



Environmental Protection Agency Region 5 Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone: (312) 353-8370 Fax: (312) 886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

standards in the samples are flagged. The quality control samples passed the % error criteria suggesting that the results were acceptable for the samples.

The LIMS had an error in sample numbering and dropped the primary sample numbers for 1805010-03, and 1805010-05. For each sample the original analysis is named sample 1805010-03RE1 and -05RE1 and the reanalysis is 1805010-03RE2 and -05RE2.

Sample 1805010-08 was reanalyzed in a separate batch to confirm the presence of very high concentrations of benzene. Most of the data is reported from the confirmation batch except naphthalene because the initial result was within a better calibration range.

Quality Control:

The internal standard response for B18E040-DUP1 had an internal standard, chlorobenzene-d5, below the acceptance limits for response. This has potentially caused a high bias in the results for the compounds that are calculated with that internal standard. The compounds are flagged Q and K.

The results for 1,3-butadiene are estimated and flagged "J" because the before snapshot and reasons for the manual integrations are not documented in this package. The BTEX results has been requested to be reported as soon as possible and the documentation would significantly slow down the release of the data package. The integrations have provided the best estimate of the 1,3-butadiene concentration in the samples and there are final integrations provided in the data package.

The reanalysis of sample 1805010-08RE1 and -RE2 was performed with an external calibration curve and no internal standards were added. The benzene (and F-12) result is flagged estimated in the 1805010-08RE1 and 18BF006-DUP1 samples because the reported concentrations were calculated from a volume of the low volume injection loop. There is no condition in the SOP that allows for this adjustment. The volume is demonstrated to be accurate by the consistent compound results from injections using a known and documented volume and also the F-12 result for the low volume sample is within expected uncertainty limits.

Blank spike B18F040-BSD2 had all low response for the internal standards. This did not affect most of the compound results in the blank spike although naphthalene was very low in that blank spike. The results did not seem affected and therefore no extra flags beyond the "IS for the internal standard being out of tolerance.

Samples B18E040-BS1 had two of the internal standards out of tolerance (1,4-difluorobenzene and chlorobenzene-d5) that were too high and 1805010-10 had the response for 1,4-difluorobenzene higher than the tolerance limit. The blank spike had acceptable %error and the sample monitoring compounds in the sample -10 were also acceptable. The samples are flagged as IS to identify the exceedance but since all the other QC was acceptable the results are interpreted as valid with no extra qualifications.

Two of the routine sample monitoring compounds, 1,1,1-trichloroethane and dichlorotetrafluoroethane, were not used for this study because they were too low in concentration to be useful. The other monitoring compound results were all acceptable and demonstrated adequate sensitivity and dilution factors.

The sample monitoring compounds detection and reporting limits were lowered to allow reporting of the results because the results were almost always within the acceptable limits when accounting for dilutions and injection volumes. The results for the two 2 mL injections had a few compounds below the lowered limits but this is to be expected for a 100-fold dilution.



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

The BS2 and BSD2 naphthalene results are not acceptable for the precision criteria of $RPD < 30\%$. This was a low volume injection and the 200 mL injection precision was acceptable for naphthalene. There was no naphthalene data reported from the low volume injections so no further action is necessary.

Sample 1805010-01 and duplicate results are out of tolerance for ethylbenzene, the xylenes naphthalene and carbon tetrachloride precision because the internal standard response had drifted in the duplicate analysis. The duplicate analysis is flagged as a high bias and for having the internal standard out of tolerance.

The initial result for ethylbenzene in the duplicate sample was below the reporting limit and is not expected to be a quantitative result therefore the duplicate RPD (precision) was out of limit.



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER

Printed: 6/5/2018 12:09:20PM

1805010

US EPA Region 5 Chicago Regional Laboratory

Client: Air Division, US EPA Region 5
Project: Middletown, OH

Project Manager: Angela Ockrassa Davis
Project Number: [none]

Report To:

Justin Coughlin
Air Division, US EPA Region 5

77 West Jackson Boulevard
Chicago, IL 60605

Phone: (312) 886-0778
Fax: (312) 353-2001

Date Due: Jul-11-18 15:00 (60 day TAT)
Received By: Colin Breslin
Logged In By: Robert Snyder

Date Received: May-10-18 13:30
Date Logged In: May-10-18 13:56

Samples Received at: 22.2 °C
Sample tags/labels: Yes
Seals Intact: Yes
Received on ice: No
Paperwork Included: Yes

Work Order Comments:

Sample ID: [1805010-01](#) **Sampled:** [May-07-18 10:08](#) **Matrix:** [Air](#)

Sample Name: [AK Steel upwind composite](#) **Sample Location/Comments:** [2774](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Air Toxics Reimer 5	30	Jun-06-18 10:08	

Sample ID: [1805010-02](#) **Sampled:** [May-07-18 10:38](#) **Matrix:** [Air](#)

Sample Name: [AK Steel downwind composite](#) **Sample Location/Comments:** [5645](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Air Toxics Reimer 5	30	Jun-06-18 10:38	

Sample ID: [1805010-03](#) **Sampled:** [May-07-18 10:39](#) **Matrix:** [Air](#)

Sample Name: [AK Steel DW grab # 1](#) **Sample Location/Comments:** [3763](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Air Toxics Reimer 5	30	Jun-06-18 10:39	

Sample ID: [1805010-04](#) **Sampled:** [May-07-18 10:59](#) **Matrix:** [Air](#)

Sample Name: [AK Steel DW comp # 2](#) **Sample Location/Comments:** [2745](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Air Toxics Reimer 5	30	Jun-06-18 10:59	

1805010

US EPA Region 5 Chicago Regional Laboratory

Client: Air Division, US EPA Region 5
Project: Middletown, OH

Project Manager: Angela Ockrassa Davis
Project Number: [none]

Sample ID: [1805010-05](#) Sampled: [May-07-18 21:15](#) Matrix: [Air](#)

Sample Name: [AK Steel DW grab # 2](#) Sample Location/Comments: [1152](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Air Toxics Reimer 5	30	Jun-06-18 21:15	

Sample ID: [1805010-06](#) Sampled: [May-07-18 21:23](#) Matrix: [Air](#)

Sample Name: [AK Steel DW grab # 3](#) Sample Location/Comments: [2277](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Air Toxics Reimer 5	30	Jun-06-18 21:23	

Sample ID: [1805010-07](#) Sampled: [May-08-18 12:54](#) Matrix: [Air](#)

Sample Name: [AK Onsite # 1](#) Sample Location/Comments: [00197](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Air Toxics Reimer 5	30	Jun-07-18 12:54	

Sample ID: [1805010-08](#) Sampled: [May-08-18 12:57](#) Matrix: [Air](#)

Sample Name: [AK Onsite # 2](#) Sample Location/Comments: [3764](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Air Toxics Reimer 5	30	Jun-07-18 12:57	

Sample ID: [1805010-09](#) Sampled: [May-08-18 13:02](#) Matrix: [Air](#)

Sample Name: [AK Onsite # 3](#) Sample Location/Comments: [1340](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Air Toxics Reimer 5	30	Jun-07-18 13:02	

Sample ID: [1805010-10](#) Sampled: [May-07-18 10:39](#) Matrix: [Air](#)

Sample Name: [AK Steel DW grab # 1 FD](#) Sample Location/Comments: [1315](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Air Toxics Reimer 5	30	Jun-06-18 10:39	

Sample ID: [1805010-11](#) Sampled: [May-07-18 21:15](#) Matrix: [Air](#)

Sample Name: [AK Steel DW grab # 2 FD](#) Sample Location/Comments: [3766](#)

Sample Comments:

Analysis	Hold time (days)	Expires	Comments
Air Toxics Reimer 5	30	Jun-06-18 21:15	

1805010

US EPA Region 5 Chicago Regional Laboratory

Client: Air Division, US EPA Region 5
Project: Middletown, OH

Project Manager: Angela Ockrassa Davis
Project Number: [none]

REVIEWED*By Robert Thompson at 12:09 pm, Jun 05, 2018*



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified)
US EPA Region 5 Chicago Regional Laboratory

AK Steel upwind composite (1805010-01)

Matrix: Air

Sampled: May-07-18 10:08

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,3-butadiene	0.0276			0.0250	ppbv	1	B18E040	May-15-18	May-16-18
Benzene	0.198			0.0250	"	"	"	"	"
Toluene	0.714			0.0250	"	"	"	"	"
Ethylbenzene	0.0896			0.0250	"	"	"	"	"
m+p-Xylene	0.318			0.0500	"	"	"	"	"
o-Xylene	0.114			0.0250	"	"	"	"	"
Naphthalene	U	B		0.0250	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.495			97%		70-130	"	"	"
Trichlorofluoromethane	0.293			125%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0841			117%		70-130	"	"	"
Carbon tetrachloride	0.0998			120%		70-130	"	"	"

AK Steel downwind composite (1805010-02)

Matrix: Air

Sampled: May-07-18 10:38

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,3-butadiene	0.121			0.0250	ppbv	1	B18E040	May-15-18	May-16-18
Toluene	1.10			0.0250	"	"	"	"	"
Ethylbenzene	0.109			0.0250	"	"	"	"	"
m+p-Xylene	0.491			0.0500	"	"	"	"	"
o-Xylene	0.173			0.0250	"	"	"	"	"
Naphthalene	0.306			0.0250	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.499			98%		70-130	"	"	"
Trichlorofluoromethane	0.295			125%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0845			117%		70-130	"	"	"
Carbon tetrachloride	0.101			122%		70-130	"	"	"

AK Steel downwind composite (1805010-02RE1)

Matrix: Air

Sampled: May-07-18 10:38

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Benzene	3.41			0.125	ppbv	1	B18E040	May-15-18	May-17-18
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified)
US EPA Region 5 Chicago Regional Laboratory

AK Steel downwind composite (1805010-02RE1)

Matrix: Air

Sampled: May-07-18 10:38

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.545			107%		70-130	B18E040	May-15-18	May-17-18
Trichlorofluoromethane	0.282	B		120%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0864			120%		70-130	"	"	"
Carbon tetrachloride	0.108			130%		70-130	"	"	"

AK Steel DW grab # 1 (1805010-03RE1)

Matrix: Air

Sampled: May-07-18 10:39

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,3-butadiene	0.0731			0.0375	ppbv	1.5	B18E040	May-15-18	May-16-18
Toluene	0.754			0.0375	"	"	"	"	"
Ethylbenzene	0.0417			0.0375	"	"	"	"	"
m+p-Xylene	0.249			0.0750	"	"	"	"	"
o-Xylene	0.0634			0.0375	"	"	"	"	"
Naphthalene	1.65			0.0375	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.461			90%		70-130	"	"	"
Trichlorofluoromethane	0.219			93%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0651			90%		70-130	"	"	"
Carbon tetrachloride	0.0740			89%		70-130	"	"	"

AK Steel DW grab # 1 (1805010-03RE2)

Matrix: Air

Sampled: May-07-18 10:39

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Benzene	3.22			0.0750	ppbv	1.5	B18E040	May-15-18	May-17-18
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.388			76%		70-130	"	"	"
Trichlorofluoromethane	0.197			84%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0656			91%		70-130	"	"	"
Carbon tetrachloride	0.0690			83%		70-130	"	"	"

AK Steel DW comp # 2 (1805010-04)

Matrix: Air

Sampled: May-07-18 10:59

Received: May-10-18 13:30



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified)
US EPA Region 5 Chicago Regional Laboratory

AK Steel DW comp # 2 (1805010-04)

Matrix: Air

Sampled: May-07-18 10:59

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,3-butadiene	0.0678			0.0250	ppbv	1	B18E040	May-15-18	May-16-18
Benzene	0.953			0.0250	"	"	"	"	"
Toluene	0.625			0.0250	"	"	"	"	"
Ethylbenzene	0.0862			0.0250	"	"	"	"	"
m+p-Xylene	0.312			0.0500	"	"	"	"	"
o-Xylene	0.119			0.0250	"	"	"	"	"
Naphthalene	0.0420	B		0.0250	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.469			92%		70-130	"	"	"
Trichlorofluoromethane	0.256			109%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0909			126%		70-130	"	"	"
Carbon tetrachloride	0.0845			102%		70-130	"	"	"

AK Steel DW grab # 2 (1805010-05RE1)

Matrix: Air

Sampled: May-07-18 21:15

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,3-butadiene	0.512			0.188	ppbv	1.5	B18E040	May-15-18	May-17-18
Toluene	3.38			0.188	"	"	"	"	"
Ethylbenzene	U			0.188	"	"	"	"	"
m+p-Xylene	0.933			0.375	"	"	"	"	"
o-Xylene	0.188			0.188	"	"	"	"	"
Naphthalene	2.85			0.188	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.418			82%		70-130	"	"	"
Trichlorofluoromethane	0.211			90%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0645			90%		70-130	"	"	"
Carbon tetrachloride	0.0730			88%		70-130	"	"	"



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified)
US EPA Region 5 Chicago Regional Laboratory

AK Steel DW grab # 2 (1805010-05RE2)

Matrix: Air

Sampled: May-07-18 21:15

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Benzene	15.1			0.375	ppbv	1.5	B18E040	May-15-18	May-17-18
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.374			73%		70-130	"	"	"
Trichlorofluoromethane	0.182			77%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0544			76%		70-130	"	"	"
Carbon tetrachloride	0.0813			98%		70-130	"	"	"

AK Steel DW grab # 3 (1805010-06)

Matrix: Air

Sampled: May-07-18 21:23

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,3-butadiene	0.336			0.0375	ppbv	1.5	B18E040	May-15-18	May-17-18
Toluene	1.91			0.0375	"	"	"	"	"
Ethylbenzene	0.0743			0.0375	"	"	"	"	"
m+p-Xylene	0.676			0.0750	"	"	"	"	"
o-Xylene	0.172			0.0375	"	"	"	"	"
Naphthalene	2.48			0.0375	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.452			89%		70-130	"	"	"
Trichlorofluoromethane	0.204			87%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0696			97%		70-130	"	"	"
Carbon tetrachloride	0.0725			87%		70-130	"	"	"

AK Steel DW grab # 3 (1805010-06RE1)

Matrix: Air

Sampled: May-07-18 21:23

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Benzene	8.79			0.188	ppbv	1.5	B18E040	May-15-18	May-17-18
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.405			79%		70-130	"	"	"
Trichlorofluoromethane	0.193			82%		70-130	"	"	"

AK Onsite # 1 (1805010-07)

Matrix: Air

Sampled: May-08-18 12:54

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
---------	--------	-----------------------	-----	--------------------	-------	----------	-------	----------	----------



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified)
US EPA Region 5 Chicago Regional Laboratory

AK Onsite # 1 (1805010-07)

Matrix: Air

Sampled: May-08-18 12:54

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,3-butadiene	0.0952			0.0375	ppbv	1.5	B18E040	May-15-18	May-17-18
Toluene	2.19			0.0375	"	"	"	"	"
Ethylbenzene	0.0494			0.0375	"	"	"	"	"
m+p-Xylene	0.749			0.0750	"	"	"	"	"
o-Xylene	0.184			0.0375	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.421			83%		70-130	"	"	"
Trichlorofluoromethane	0.207			88%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0651			90%		70-130	"	"	"
Carbon tetrachloride	0.0712			86%		70-130	"	"	"

AK Onsite # 1 (1805010-07RE1)

Matrix: Air

Sampled: May-08-18 12:54

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Benzene	10.9			0.188	ppbv	1.5	B18E040	May-15-18	May-17-18
Naphthalene	1.53			0.188	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.398			78%		70-130	"	"	"
Trichlorofluoromethane	0.228			97%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0771			107%		70-130	"	"	"
Carbon tetrachloride	0.0682			82%		70-130	"	"	"

AK Onsite # 2 (1805010-08)

Matrix: Air

Sampled: May-08-18 12:57

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Naphthalene	25.8			0.375	ppbv	1.5	B18E040	May-15-18	May-17-18
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.375			73%		70-130	"	"	"
Trichlorofluoromethane	0.211			90%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0807			112%		70-130	"	"	"
Carbon tetrachloride	0.0762			92%		70-130	"	"	"



Environmental Protection Agency Region 5 Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified) US EPA Region 5 Chicago Regional Laboratory

AK Onsite # 2 (1805010-08RE1)

Matrix: Air

Sampled: May-08-18 12:57

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Benzene	67.8	J		3.75	ppbv	1.5	B18F006	Jun-06-18	Jun-06-18
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.560			110%		70-130	"	"	"

AK Onsite # 2 (1805010-08RE2)

Matrix: Air

Sampled: May-08-18 12:57

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,3-butadiene	0.508			0.188	ppbv	1.5	B18F006	Jun-06-18	Jun-06-18
Toluene	12.1			0.188	"	"	"	"	"
Ethylbenzene	U			0.188	"	"	"	"	"
m+p-Xylene	3.96			0.375	"	"	"	"	"
o-Xylene	0.916			0.188	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.489			96%		70-130	"	"	"
Trichlorofluoromethane	0.231			98%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0723			100%		70-130	"	"	"
Carbon tetrachloride	0.0862			104%		70-130	"	"	"

AK Onsite # 3 (1805010-09)

Matrix: Air

Sampled: May-08-18 13:02

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,3-butadiene	0.237			0.0750	ppbv	1.5	B18E040	May-15-18	May-17-18
Toluene	5.24			0.0750	"	"	"	"	"
Ethylbenzene	0.0978			0.0750	"	"	"	"	"
m+p-Xylene	1.86			0.150	"	"	"	"	"
o-Xylene	0.443			0.0750	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.413			81%		70-130	"	"	"
Trichlorofluoromethane	0.187			80%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0722			100%		70-130	"	"	"
Carbon tetrachloride	0.0680			82%		70-130	"	"	"



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified)
US EPA Region 5 Chicago Regional Laboratory

AK Onsite # 3 (1805010-09RE1)

Matrix: Air

Sampled: May-08-18 13:02

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Benzene	28.2			0.375	ppbv	1.5	B18E040	May-15-18	May-17-18
Naphthalene	25.6			0.375	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.403			79%		70-130	"	"	"
Trichlorofluoromethane	0.227			97%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0602			84%		70-130	"	"	"
Carbon tetrachloride	0.0812			98%		70-130	"	"	"

AK Steel DW grab # 1 FD (1805010-10)

Matrix: Air

Sampled: May-07-18 10:39

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,3-butadiene	U			0.0750	ppbv	1.5	B18E040	May-15-18	May-17-18
Benzene	3.02			0.0750	"	"	"	"	"
Toluene	0.732			0.0750	"	"	"	"	"
Ethylbenzene	U			0.0750	"	"	"	"	"
m+p-Xylene	0.233			0.150	"	"	"	"	"
o-Xylene	U			0.0750	"	"	"	"	"
Naphthalene	1.26			0.0750	"	"	"	"	"
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.388			76%		70-130	"	"	"
Trichlorofluoromethane	0.171			73%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0636			88%		70-130	"	"	"
Carbon tetrachloride	0.0621			75%		70-130	"	"	"

AK Steel DW grab # 2 FD (1805010-11)

Matrix: Air

Sampled: May-07-18 21:15

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
1,3-butadiene	0.503			0.188	ppbv	1.5	B18E040	May-15-18	May-17-18
Toluene	3.34			0.188	"	"	"	"	"
Ethylbenzene	U			0.188	"	"	"	"	"
m+p-Xylene	0.921			0.375	"	"	"	"	"
o-Xylene	U			0.188	"	"	"	"	"
Naphthalene	2.35			0.188	"	"	"	"	"



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified)
US EPA Region 5 Chicago Regional Laboratory

AK Steel DW grab # 2 FD (1805010-11)

Matrix: Air

Sampled: May-07-18 21:15

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.410			80%		70-130	B18E040	May-15-18	May-17-18
Trichlorofluoromethane	0.223			95%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0614			85%		70-130	"	"	"
Carbon tetrachloride	0.0754			91%		70-130	"	"	"

AK Steel DW grab # 2 FD (1805010-11RE1)

Matrix: Air

Sampled: May-07-18 21:15

Received: May-10-18 13:30

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Benzene	15.0			0.375	ppbv	1.5	B18E040	May-15-18	May-17-18
Surogate	Result			%REC		%REC Limits	Batch	Prepared	Analyzed
Dichlorodifluoromethane	0.358			70%		70-130	"	"	"
Trichlorofluoromethane	0.194			82%		70-130	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	0.0672			93%		70-130	"	"	"
Carbon tetrachloride	0.0747			90%		70-130	"	"	"



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B18E040 - ColdTrap Dehydration

Blank (B18E040-BLK1)

Prepared & Analyzed: May-15-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	U			0.0250	ppbv						
Benzene	U			0.0250	"						
Toluene	U			0.0250	"						
Ethylbenzene	U			0.0250	"						
m+p-Xylene	U			0.0500	"						
o-Xylene	U			0.0250	"						
Naphthalene	U			0.0250	"						
Surrogate: Dichlorodifluoromethane	0.0161			1.00E-3	"				70-130		
Surrogate: Trichlorofluoromethane	0.0110			1.00E-3	"				70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	3.77E-3			1.00E-3	"				70-130		
Surrogate: Carbon tetrachloride	3.32E-3			1.00E-3	"				70-130		

Blank (B18E040-BLK2)

Prepared: May-15-18 Analyzed: May-16-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	U			0.0250	ppbv						
Benzene	U			0.0250	"						
Toluene	U			0.0250	"						
Ethylbenzene	U			0.0250	"						
m+p-Xylene	U			0.0500	"						
o-Xylene	U			0.0250	"						
Naphthalene	U			0.0250	"						
Surrogate: Dichlorodifluoromethane	U			1.00E-3	"				70-130		
Surrogate: Trichlorofluoromethane	U			1.00E-3	"				70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	U			1.00E-3	"				70-130		
Surrogate: Carbon tetrachloride	U			1.00E-3	"				70-130		

Blank (B18E040-BLK3)

Prepared: May-15-18 Analyzed: May-17-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	U			0.0250	ppbv						
Benzene	U			0.0250	"						



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B18E040 - ColdTrap Dehydration

Blank (B18E040-BLK3)

Prepared: May-15-18 Analyzed: May-17-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Toluene	U			0.0250	ppbv						
Ethylbenzene	U			0.0250	"						
m+p-Xylene	U			0.0500	"						
o-Xylene	U			0.0250	"						
Naphthalene	0.0778			0.0250	"						
Surrogate: Dichlorodifluoromethane	U			1.00E-3	"				70-130		
Surrogate: Trichlorofluoromethane	U			1.00E-3	"				70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	U			1.00E-3	"				70-130		
Surrogate: Carbon tetrachloride	U			1.00E-3	"				70-130		

LCS (B18E040-BS1)

Prepared: May-15-18 Analyzed: May-17-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	0.608	(IS)		0.0250	ppbv	0.5450		112%	70-130		
Benzene	0.441	(IS)		0.0250	"	0.5040		88%	70-130		
Toluene	0.460	(IS)		0.0250	"	0.4920		94%	70-130		
Ethylbenzene	0.484	(IS)		0.0250	"	0.4890		99%	70-130		
m+p-Xylene	0.974	(IS)		0.0500	"	0.9850		99%	70-130		
o-Xylene	0.484	(IS)		0.0250	"	0.4860		100%	70-130		
Naphthalene	0.512	(IS)		0.0250	"	0.5130		100%	70-130		
Surrogate: Dichlorodifluoromethane	0.373	(IS)		1.00E-3	"	0.5210		72%	70-130		
Surrogate: Trichlorofluoromethane	0.393	(IS)		1.00E-3	"	0.5370		73%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	0.429	(IS)		1.00E-3	"	0.5250		82%	70-130		
Surrogate: Carbon tetrachloride	0.355	(IS)		1.00E-3	"	0.5000		71%	70-130		

LCS (B18E040-BS2)

Prepared: May-15-18 Analyzed: May-16-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	52.3			2.50	ppbv	54.50		96%	70-130		
Benzene	51.3			2.50	"	50.40		102%	70-130		
Toluene	48.6			2.50	"	49.20		99%	70-130		
Ethylbenzene	49.9			2.50	"	48.90		102%	70-130		
m+p-Xylene	100			5.00	"	98.50		102%	70-130		



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B18E040 - ColdTrap Dehydration

LCS (B18E040-BS2)

Prepared: May-15-18 Analyzed: May-16-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
o-Xylene	52.6			2.50	ppbv	48.60		108%	70-130		
Naphthalene	15.8	Q		2.50	"	51.30		31%	70-130		
Surrogate: Dichlorodifluoromethane	48.0			0.100	"	52.10		92%	70-130		
Surrogate: Trichlorofluoromethane	68.9			0.100	"	53.70		128%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	52.2			0.100	"	52.50		99%	70-130		
Surrogate: Carbon tetrachloride	52.7			0.100	"	50.00		105%	70-130		

LCS Dup (B18E040-BSD1)

Prepared: May-15-18 Analyzed: May-17-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	0.618			0.0250	ppbv	0.5450		113%	70-130	2	30
Benzene	0.495			0.0250	"	0.5040		98%	70-130	11	30
Toluene	0.513			0.0250	"	0.4920		104%	70-130	11	30
Ethylbenzene	0.526			0.0250	"	0.4890		108%	70-130	8	30
m+p-Xylene	1.07			0.0500	"	0.9850		109%	70-130	9	30
o-Xylene	0.537			0.0250	"	0.4860		111%	70-130	10	30
Naphthalene	0.576			0.0250	"	0.5130		112%	70-130	12	30
Surrogate: Dichlorodifluoromethane	0.502			1.00E-3	"	0.5210		96%	70-130		
Surrogate: Trichlorofluoromethane	0.474			1.00E-3	"	0.5370		88%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	0.524			1.00E-3	"	0.5250		100%	70-130		
Surrogate: Carbon tetrachloride	0.482			1.00E-3	"	0.5000		96%	70-130		

LCS Dup (B18E040-BSD2)

Prepared: May-15-18 Analyzed: May-16-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	59.9	(IS)		2.50	ppbv	54.50		110%	70-130	13	30
Benzene	53.1	(IS)		2.50	"	50.40		105%	70-130	3	30
Toluene	47.8	(IS)		2.50	"	49.20		97%	70-130	2	30
Ethylbenzene	51.6	(IS)		2.50	"	48.90		106%	70-130	3	30
m+p-Xylene	103	(IS)		5.00	"	98.50		105%	70-130	3	30
o-Xylene	52.7	(IS)		2.50	"	48.60		108%	70-130	0.1	30
Naphthalene	49.6	(IS), Q		2.50	"	51.30		97%	70-130	103	30
Surrogate: Dichlorodifluoromethane	55.3	(IS)		0.100	"	52.10		106%	70-130		



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B18E040 - ColdTrap Dehydration

LCS Dup (B18E040-BSD2)

Prepared: May-15-18 Analyzed: May-16-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: Trichlorofluoromethane	64.7	(IS)		0.100	ppbv	53.70		121%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	52.8	(IS)		0.100	"	52.50		101%	70-130		
Surrogate: Carbon tetrachloride	51.5	(IS)		0.100	"	50.00		103%	70-130		

Duplicate (B18E040-DUP1)

Source: 1805010-01

Prepared: May-15-18 Analyzed: May-16-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	0.0360			0.0250	ppbv		0.0276			27	30
Benzene	0.239			0.0250	"		0.198			19	30
Toluene	0.845			0.0250	"		0.714			17	30
Ethylbenzene	0.123	(IS), K, Q		0.0250	"		0.0896			31	30
m+p-Xylene	0.437	(IS), K, Q		0.0500	"		0.318			31	30
o-Xylene	0.159	(IS), K, Q		0.0250	"		0.114			32	30
Naphthalene	0.0253	(IS), B, K		0.0250	"		0.0186			30	30
Surrogate: Dichlorodifluoromethane	0.513			1.00E-3	"	0.5100		100%	70-130		
Surrogate: Trichlorofluoromethane	0.305			1.00E-3	"	0.2350		130%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	0.0870			1.00E-3	"	7.200E-2		121%	70-130		
Surrogate: Carbon tetrachloride	0.118	Q		1.00E-3	"	8.300E-2		143%	70-130		

Duplicate (B18E040-DUP2)

Source: 1805010-11

Prepared: May-15-18 Analyzed: May-17-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	0.502			0.188	ppbv		0.503			0.4	30
Benzene	16.3			0.188	"		16.1			1	30
Toluene	3.35			0.188	"		3.34			0.3	30
Ethylbenzene	0.100	J, Q		0.188	"		0.139			32	30
m+p-Xylene	0.930			0.375	"		0.921			1	30
o-Xylene	0.237			0.188	"		0.187			23	30
Naphthalene	2.41			0.188	"		2.35			2	30
Surrogate: Dichlorodifluoromethane	0.429			7.50E-3	"	0.5100		84%	70-130		
Surrogate: Trichlorofluoromethane	0.214			7.50E-3	"	0.2350		91%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	0.0641			7.50E-3	"	7.200E-2		89%	70-130		



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B18E040 - ColdTrap Dehydration

Duplicate (B18E040-DUP2)		Source: 1805010-11		Prepared: May-15-18 Analyzed: May-17-18							
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Surrogate: Carbon tetrachloride	0.0709			7.50E-3	ppbv	8.300E-2		85%	70-130		

Batch B18F006 - ColdTrap Dehydration

Blank (B18F006-BLK1)				Prepared & Analyzed: Jun-06-18							
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	U			0.125	ppbv						
Benzene	U			0.125	"						
Toluene	U			0.125	"						
Ethylbenzene	U			0.125	"						
m+p-Xylene	U			0.250	"						
o-Xylene	U			0.125	"						
Naphthalene	U			0.125	"						
Surrogate: Dichlorodifluoromethane	U	Q		5.00E-3	"	2.550		%	70-130		
Surrogate: Trichlorofluoromethane	U	Q		5.00E-3	"	1.175		%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	U	Q		5.00E-3	"	0.3600		%	70-130		
Surrogate: Carbon tetrachloride	U	Q		5.00E-3	"	0.4150		%	70-130		

Blank (B18F006-BLK2)				Prepared & Analyzed: Jun-06-18							
Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	U			2.50	ppbv						
Benzene	U			2.50	"						
Toluene	U			2.50	"						
Ethylbenzene	U			2.50	"						
m+p-Xylene	U			5.00	"						
o-Xylene	U			2.50	"						
Naphthalene	3.81	Q		2.50	"						
Surrogate: Dichlorodifluoromethane	U	Q		0.100	"	51.00		%	70-130		
Surrogate: Trichlorofluoromethane	U	Q		0.100	"	23.50		%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	U	Q		0.100	"	7.200		%	70-130		
Surrogate: Carbon tetrachloride	U	Q		0.100	"	8.300		%	70-130		



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Air Toxics by GC/MS, EPA TO-15 (modified) - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B18F006 - ColdTrap Dehydration

LCS (B18F006-BS1)

Prepared & Analyzed: Jun-06-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	0.664			0.0250	ppbv	0.5450		122%	70-130		
Benzene	0.568			0.0250	"	0.5040		113%	70-130		
Toluene	0.516			0.0250	"	0.4920		105%	70-130		
Ethylbenzene	0.481			0.0250	"	0.4890		98%	70-130		
m+p-Xylene	0.959			0.0500	"	0.9850		97%	70-130		
o-Xylene	0.471			0.0250	"	0.4860		97%	70-130		
Naphthalene	0.511			0.0250	"	0.5130		100%	70-130		
Surrogate: Dichlorodifluoromethane	0.587			1.00E-3	"	0.5210		113%	70-130		
Surrogate: Trichlorofluoromethane	0.499			1.00E-3	"	0.5370		93%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	0.522			1.00E-3	"	0.5250		99%	70-130		
Surrogate: Carbon tetrachloride	0.547			1.00E-3	"	0.5000		109%	70-130		

LCS Dup (B18F006-BSD1)

Prepared & Analyzed: Jun-06-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
1,3-butadiene	0.613			0.0250	ppbv	0.5450		112%	70-130	8	30
Benzene	0.556			0.0250	"	0.5040		110%	70-130	2	30
Toluene	0.503			0.0250	"	0.4920		102%	70-130	3	30
Ethylbenzene	0.473			0.0250	"	0.4890		97%	70-130	2	30
m+p-Xylene	0.936			0.0500	"	0.9850		95%	70-130	2	30
o-Xylene	0.461			0.0250	"	0.4860		95%	70-130	2	30
Naphthalene	0.519			0.0250	"	0.5130		101%	70-130	2	30
Surrogate: Dichlorodifluoromethane	0.564			1.00E-3	"	0.5210		108%	70-130		
Surrogate: Trichlorofluoromethane	0.544			1.00E-3	"	0.5370		101%	70-130		
Surrogate: 1,1,2-trichloro-1,2,2-trifluoroethane (Freon	0.487			1.00E-3	"	0.5250		93%	70-130		
Surrogate: Carbon tetrachloride	0.529			1.00E-3	"	0.5000		106%	70-130		

Duplicate (B18F006-DUP1)

Source: 1805010-08RE1

Prepared & Analyzed: Jun-06-18

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Benzene	67.6	J		3.75	ppbv		67.8			0.4	30
Surrogate: Dichlorodifluoromethane	0.572			0.150	"	0.5100		112%	70-130		



Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Air Division, US EPA Region 5
77 West Jackson Boulevard
Chicago IL, 60605

Project: Middletown, OH
Project Number: [none]
Project Manager: Justin Coughlin

Reported:
Jun-26-18 15:35

Notes and Definitions

- K The identification of the analyte is acceptable; the reported value may be biased high. The actual value is expected to be less than the reported value.
- J The identification of the analyte is acceptable; the reported value is an estimate.
- B Analyte concentration is < 5x that in the associated method blank(s); this concentration may be a high-bias estimate.
- (IS) Internal standard criteria not met for this analyte
- U Not Detected
- NR Not Reported
- Q QC limit Exceeded